

### REMARKS/ARGUMENTS

Claims 1-14 remain unchanged. Claims 15-18 were canceled in a previously-submitted Amendment. Claims 19-21 are newly added. Support for the new claims can be found at, e.g., paragraphs 0041, 0106, 115, 123, 127, 128, 130 of the published application. No new matter is added. Entry of the above amendments is respectfully requested. Upon entry of the above amendments, claims 1-14, 19 and 20 are pending. Reconsideration of the present application is respectfully solicited in view of the above amendments and the following remarks.

#### Claims are allowable under 35 U.S.C. § 103(a)

Applicants gratefully note the Examiner has withdrawn the rejection of claims 1-14 under 35 U.S.C. §103(a) as being unpatentable over Vasseur (WO 02/088238) in view of Sandstrom (US 2003/0089438).

Nevertheless, the Examiner rejects claims 1-14 on a new ground. Specifically, the Examiner rejects claims 1-14 under 35 U.S.C. §103(a) as being unpatentable over Hopkins (US 2002/0198305) in view of Vasseur. Applicants respectfully traverse. (For convenience, the citations below for Vasseur are from its English language equivalent US 2004/0127617.

Independent claim 1 recites a **passenger car tire** comprising a tread. The tread comprises a rubber composition, which comprises a diene elastomer, silica in an amount of greater than 50 phr, a coupling agent, and a plasticising agent. The diene elastomer comprises more than 30 phr of butyl rubber. **The plasticising agent comprises an unsaturated (C<sub>12</sub>-C<sub>22</sub>) fatty acid triester of glycerol.**

Specifically, the Examiner states that the primary reference Hopkins teaches every limitation of claims 1-14 except for the use of unsaturated (C<sub>12</sub>-C<sub>22</sub>) fatty acid triester of glycerol

as a plasticizing agent. According to the Examiner, Vasseur suggests the grip performance of the tire tread is conserved over time when unsaturated ( $C_{12}$ - $C_{22}$ ) fatty acid triester of glycerol is used in the rubber composition of a tire tread. Therefore, the Examiner concludes that it would have been obvious for a person of ordinary skill in the art to use the unsaturated ( $C_{12}$ - $C_{22}$ ) fatty acid triester of glycerol disclosed in Vasseur as a plasticizing agent in Hopkins' tire tread composition to improve the grip performance of Hopkins' tire.

For reasons set forth below, it is respectfully submitted that claims 1-14 are not obvious under 35 U.S.C. §103(a) over Hopkins in view of Vasseur.

(i)

Firstly, the primary reference Hopkins is clearly directed to (among applications other than tires) to tire tread of a heavy vehicle, such as trucks and buses. *See* paragraphs 0002, 0084, and claims 11-13 of Hopkins. Nowhere does Hopkins mention that the elastomeric composition disclosed therein can be used for a passenger car tire. Therefore, combining Hopkins and Vasseur as proposed by the Examiner would not have arrived at the invention of claims 1-14, which are directed to a **passenger car tire**.

(ii)

Vasseur, is directed to a **light** passenger vehicle running at a **high** speed.

Hopkins is directed to a **heavy** vehicle running at a **low** speed.

There is no apparent reason for a person of ordinary skill in the art to add unsaturated ( $C_{12}$ - $C_{22}$ ) fatty acid triester of glycerol to Hopkins' tire tread composition, based on Vasseur, which is directed to a **light** passenger vehicle running on roads at a **high** speed, to improve the grip of Hopkins' tire, which is directed to a **heavy** vehicle running at a **low** speed.

Vasseur is directed to tires of a passenger vehicle, which is apparently designed for running on roads at a very high speed. *See* paragraph 0002. There is a need to improve the grip of tires of a passenger vehicle on dry or damp ground. *See* paragraph 0005.

On the other hand, as stated above, Hopkins is directed to tires of heavy vehicle, which is designed to run at a much lower speed compared to a light passenger car. Due to its much lower and heavier weight compared to a light passenger car, a heavy vehicle does not have the same concern or demand for high grip ability, as does a light passenger car in Vasseur. Indeed, as evidenced by Sandstrom, which was previously cited by the Examiner, it is well known that heavy vehicles rely more on their weight to provide tire tread traction over the ground, in contrast to passenger tires. Neither Hopkins nor Vasseur teaches, discloses or suggests any need to improve the grip ability of the tire of a heavy vehicle.

Therefore, the references cited by the Examiner provide no apparent motivation for a person of ordinary skill in the art to add unsaturated (C<sub>12</sub>-C<sub>22</sub>) fatty acid triester of glycerol, which is used in Vasseur for a light passenger vehicle running at a high speed, to Hopkins' tire tread composition for a heavy vehicle running at a much lower speed.

(iii)

Thirdly, a person of ordinary skill in the art would have no reasonable expectation of success for a modification of Hopkins' heavy vehicle tire composition based on Vasseur's teachings, as proposed by the Examiner.

Specifically, a passenger vehicle as disclosed in Vasseur and a heavy vehicle as disclosed in Hopkins have different requirements in many respects, including rolling resistance, wear resistance, and wet traction. These requirements are often contradictory to each other. As stated by Hopkins, improvements in one property are achieved at the expense of other properties.

More importantly, the basic elastomeric composition in Hopkins is significantly different from the composition of Vasseur. Hopkins requires that its composition comprises **natural rubber and halobutyl elastomer**. See, e.g., abstract, paragraphs 0002, 0003, 004, 0007-0013, Tables 1 and 4, and Examples 1-2. On the other hand, Vasseur explicitly requires and emphasizes that its composition comprise **highly unsaturated** diene elastomers, typically SBR, i.e., the diene elastomer has a high content (>50%) of units of diene origin. See paragraph 0044.

The butyl rubbers disclosed in Hopkins belong to the class of **essentially saturated** diene elastomers, having a very low content (less than 15%) of units of diene origin. See paragraph 0030 of the present application. The natural rubber disclosed in Hopkins is often used in heavy vehicles, such as trucks. See paragraph 0002 and Table 1 of Hopkins. SBR disclosed in Vasseur is synthetic and highly unsaturated.

Accordingly, due to the significant differences concerning the composition and requirements of Hopkins and Vasseur, a person of ordinary skill in the art would not have any reasonable expectation of success to simply add one ingredient disclosed in Vasseur to another significantly different tire composition for a different type of vehicle as disclosed in Hopkins. Nor would s/he reasonably expect that doing so would not in actuality adversely affect or interfere with some critical properties of Hopkins' vehicle tire tread.

(iv)

Fourthly, the unexpected results as shown at paragraphs 0122-0140 of the present published application further indicate that the invention as described in claims 1-14 of the present application is not obvious over Hopkins in view of Vasseur. See MPEP 716.02(a) (III) ("Presence of an unexpected property is evidence of nonobviousness.") As explained at, e.g., paragraph 0006 of the present published application, the grip of the tire as described in claims

1-14 on wet ground is significantly increased. This unexpected result is further demonstrated by the comparative test results described at paragraphs 0122-0140 of the present published application.

In the comparative tests, the control composition C-1 comprises two known SBR and BR diene elastomers, and is conventionally used in what are called "green" tires of low energy consumption. The composition according to the present invention C-2 comprises 50 phr of butyl rubber with which are associated 50 phr of an SBR of the same structure as C-1 (but devoid of aromatic oil), and also a glycerol fatty acid triester (sunflower oil having a high content of oleic acid). In these comparative examples, compositions C-1 and C-2 are used as treads of radial-carcass tires for passenger-vehicles, referred to respectively as P-1 (control tires) and P-2 (tires according to the invention). It was noted that under the same braking test conditions, the braking distance of the P-2 tires (i.e. according to the present invention) on wet road was unexpectedly reduced by as much as 26% compared to the braking distance of the control tires P-1.

#### Conclusion:

For at least the reasons expressed above, modifying Hopkins in view of Vasseur as suggested by the Examiner to create the arrangement of present claims 1-14 is not obvious under 35 U.S.C. §103(a). Withdrawal of the rejections of claims 1-14 is, therefore, appropriate, and such action is respectfully requested. For at least the same reasons, new claims 19-21, each of which depends from claim 1, are also not obvious under 35 U.S.C. §103(a) over Hopkins in view of Vasseur.

Additionally, the new features recited in claims 19-21 provide a further ground that these claims are not obvious under 35 U.S.C. §103(a) over Hopkins in view of Vasseur. Specifically,

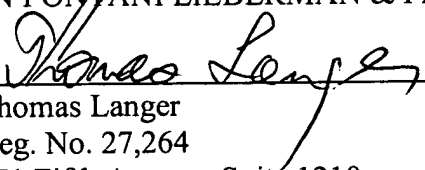
according to new claim 19, the diene elastomer comprises both SBR and more than 30 phr of butyl rubber. According to claim 20, the SBR is prepared in a solution. According to claim 21, the diene comprises SBR, polybutadiene, and more than 30 phr of butyl rubber. Hopkins and Vasseur, taken together, fail to teach the features recited in claims 19-21.

Applicants believe that the present application is in condition for allowance. Early and favorable consideration is earnestly requested.

It is believed that no other fees or charges are required at this time in connection with the present application. However, if any fees or charges are required at this time, they may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,  
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